PATENT
Attorney Docket No. 08015.0023

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	)	
	)	
Ho-Suk KIM et al.	)	Group Art Unit: 1795
	)	
Application No.: 10/542,642	)	Examiner: DAVIS, Patricia A.
	)	
Filed: July 19, 2005	)	Confirmation No. 1718
	)	
For: SEALING STRUCTURE FOR POLYMER ELECTROLYTE FUEL CELL	)	

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

REPLY BRIEF UNDER 37 C.F.R. § 41.41

Pursuant to 37 C.F.R. § 41.41 and in reply to the Examiner's Answer mailed September 30, 2010, the period for response extending through November 30, 2010, Appellants submit this Reply Brief.

In the Examiner's Answer, the Examiner maintains the grounds of rejection. Claims 1, 3-6, 9, and 10[1] are rejected under 35 U.S.C. § 103(a) as being unpatentable over Schilling et al. (U.S. Patent No. 6,338,492, hereafter "Schilling"); claim 7 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Schilling in view of Sasaki et al. (U.S. Patent No. 6,337,120, hereafter "Sasaki"); and claim 8 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Schilling in view of Sakumoto et al. (U.S.

1 The Examiner stated on page 3 of the Examiner's Answer that claims 1, 3-6 and 9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Schilling, but also discussed claim 10 on page 7.

Publication No. 2002/0106954 A1, hereafter "Sakumoto"). For the following reasons, Appellants respectfully traverse the rejections.

Appellants' claim 1 calls for a sealing structure including:

"a bipolar plate including a sealing groove and an anchor groove coupled to a periphery of the sealing groove, the sealing groove surrounding at least one of a reaction site or a manifold formed on the bipolar plate, the anchor groove extending toward an outer edge of the bipolar plate, and a width of the anchor groove being greater than a width of the sealing groove;

a sealing member formed of rubber and positioned in the sealing groove and the anchor groove; and

a gasket plate interposed between the bipolar plate and the membrane electrode assembly, wherein the sealing member is formed by drying liquid rubber, the liquid rubber filling in the sealing groove by controlling a dispenser to start from the anchor groove and finish in the anchor groove by way of the sealing groove."

The Examiner alleged that "Schilling shows plugs (gasket plate 15) in Fig. 3B. It can be evidenced by Fig. 3B that the plugs are in a plate-like shape." See the Examiner's Answer at page 9 (emphasis added). The Examiner also alleged that "[t]he claim language does not recite that the gasket plate interposed between the bipolar plate and the membrane electrode assembly must run the entire length of the membrane electrode assembly and the bipolar plate." See id. These allegations are incorrect.

At the outset, Appellants note that Fig. 3B of Schilling is a cross-sectional view along an A-A line shown in Fig. 3A. See Schilling, col. 4, lines 3-5. In other words, Fig. 3A is a top view of bipolar plate 2, or a view of a flat side of plate 2; and Fig. 3B is a cross sectional side view, or a view cutting through the plate 2 shown in Fig. 3A.

Appellants do not agree that the plugs 15 of Schilling are of plate-like shape. Moreover, Schilling also does not disclose that the plugs 15 are plate-shaped. As shown Fig. 3B, plugs 15 appear to be "plugs" which are formed in a direction further into the bipolar plate 2 to plug, or retain, the sealing element 10 in blind holes 16 formed on the bipolar plate 2. See Schilling, col. 4, lines 7-8. The plugs 15 therefore are formed to secure and anchor the sealing element 10 to the bipolar plate 2. See Schilling, col. 4, lines 13-14. Appellants note that Schilling characterizes element 2, which is shown in Fig. 3A, as a "plate." On the other hand, Schilling characterizes element 15 as "plug." Without having to determine the specific size and dimension of elements 2 and 15 of Schilling, Appellants submit that a person of ordinary skill in the art would be able to distinguish between a "plate" and a "plug," and the differences between the shape of a bipolar "plate" 2 and the shape of a "plug" 15 of Schilling.

Furthermore, regarding the Examiner's contention that Appellants' "claim language does not recite that the gasket plate interposed between the bipolar plate and the membrane electrode assembly must run the entire length of the membrane electrode assembly and the bipolar plate," Appellants provide the following remarks. Claim 1 does not define the specific size and dimension of the claimed "gasket plate," and certainly does not require that the claimed "gasket plate" must run the entire length of the membrane electrode assembly and the bipolar plate. In the absence of such definition, Appellants submit that a "plate," as claimed, should be considered by its ordinary meaning of a vessel or object having a generally broad, flat shape, for example. Specifically, Merriam-Webster Online dictionary, for example, defines "plate" as a smooth flat thin piece of material. In this application, Appellants claim a "bipolar

plate" and a "gasket plate." As illustrated in Appellants' Fig. 4, for example, Appellants' bipolar plate 100 and gasket plate 200 both have a flat, thin shape which are at least similar to each other, and therefore possess similar plate-like characteristics.

Finally, Appellants note that claim 1 recites "a bipolar plate," "a sealing member formed of rubber and positioned in the sealing groove and the anchor groove," and "a gasket plate interposed between the bipolar plate and the membrane electrode assembly" as discrete and separate elements of the claimed sealing structure. Contrary to claim 1, the plug 15 of Schilling is part of the sealing element 10, made of the same material and attached to the sealing element 10, as acknowledged by the Examiner. Schilling therefore fails to disclose or suggest that the plugs 15 are a separate, discrete element that corresponds to the claimed "gasket plate" of claim 1. Moreover, Schilling clearly fails to disclose any other element that could correspond to the claimed "gasket plate" of claim 1.

The Examiner also alleged that "Schilling does teach blind holes (anchor grooves 16, 18) that are extended down into the outer edge of the bipolar plate (2). ... It is the position of the Examiner that the outer edge of the bipolar plate (2) can be the bottom of the bipolar plate (2) of Schilling." See the Examiner's Answer at page 10. The Examiner also reproduced Schilling's Figs. 1 and 3B, and added a caption for an alleged outer edge of bipolar plate 2.

Claim 1 recites an anchor groove "extending toward an outer edge of the bipolar plate." Appellants note that an outer edge of the bipolar plate 2 in Schilling is illustrated in Fig. 3A by the outer lines of a bipolar plate 2. Appellants also note that Fig. 1 of Schilling illustrates a view cutting through the assembled structure including bipolar

plates 2 and 3 and interposed MEA (membrane electrode assembly). In other words, Figs. 1 and 3B are both views of Schilling's structure in a direction perpendicular to the view shown in Fig. 3A. More specifically, the line referred to by the Examiner as an alleged "[o]uter edge of bipolar plate (2)" in the reproduced Fig. 3B is, in fact, an imaginary cross-section line, i.e. A-A line, on one of the two faces of the bipolar plate 2 as shown in Fig. 3A. Thus, the bottom line of the bipolar plate 2 in Fig. 3B, for example, which is incorrectly characterized by the Examiner as an outer edge of bipolar plate 2, is not an edge but rather an imaginary line in the middle of the bipolar plate 2.

In view of the above, Appellants submit that independent claim 1 should be allowable over Schilling. Claims 3-6, 9, and 10 depend directly or indirectly from base claim 1, and should be allowable at least due to their dependence. In addition, Sasaki and Sakumoto were applied in connection with dependent claims 7 and 8. These references, however, at least fail to cure the above deficiencies of Schilling regarding claim 1. Therefore, claims 7 and 8 should be allowable over the cited references at least due to their dependence from claim 1.

Accordingly, Appellants respectfully request that the Board reverse the rejections of the appealed claims 1 and 3-10 under 35 U.S.C. § 103(a) and allow the pending claims.

Please charge any required fees not submitted herewith to our Deposit Account No. 06-0916.

Respectfully submitted,

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Dated: November 24, 2010

By:_____

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